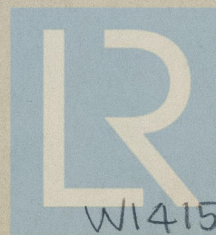




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S. Waramala

P. & D.

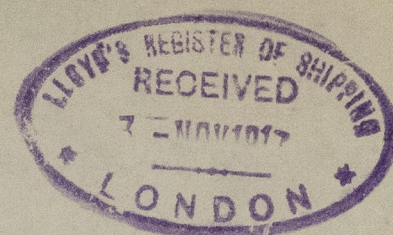
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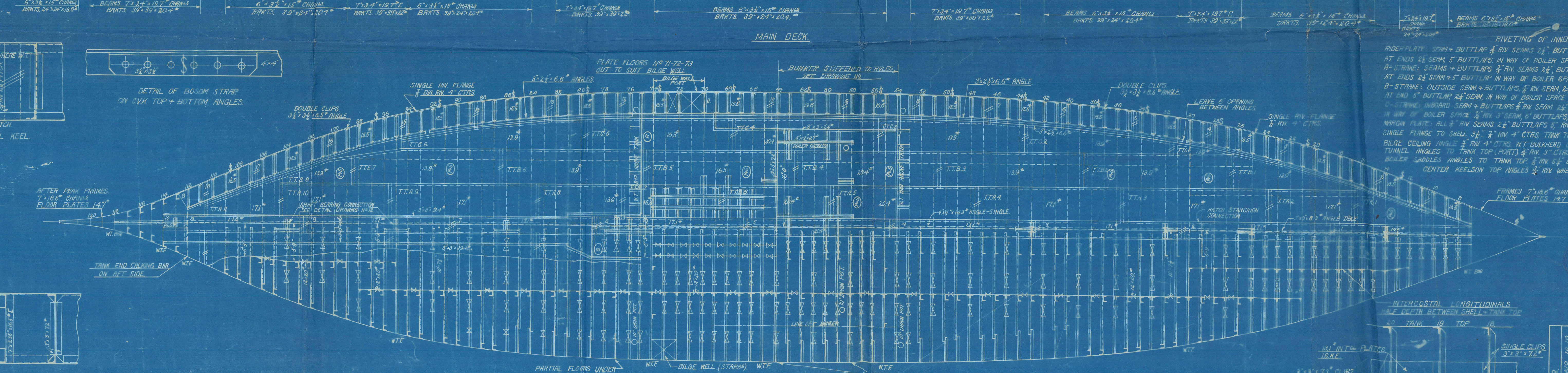
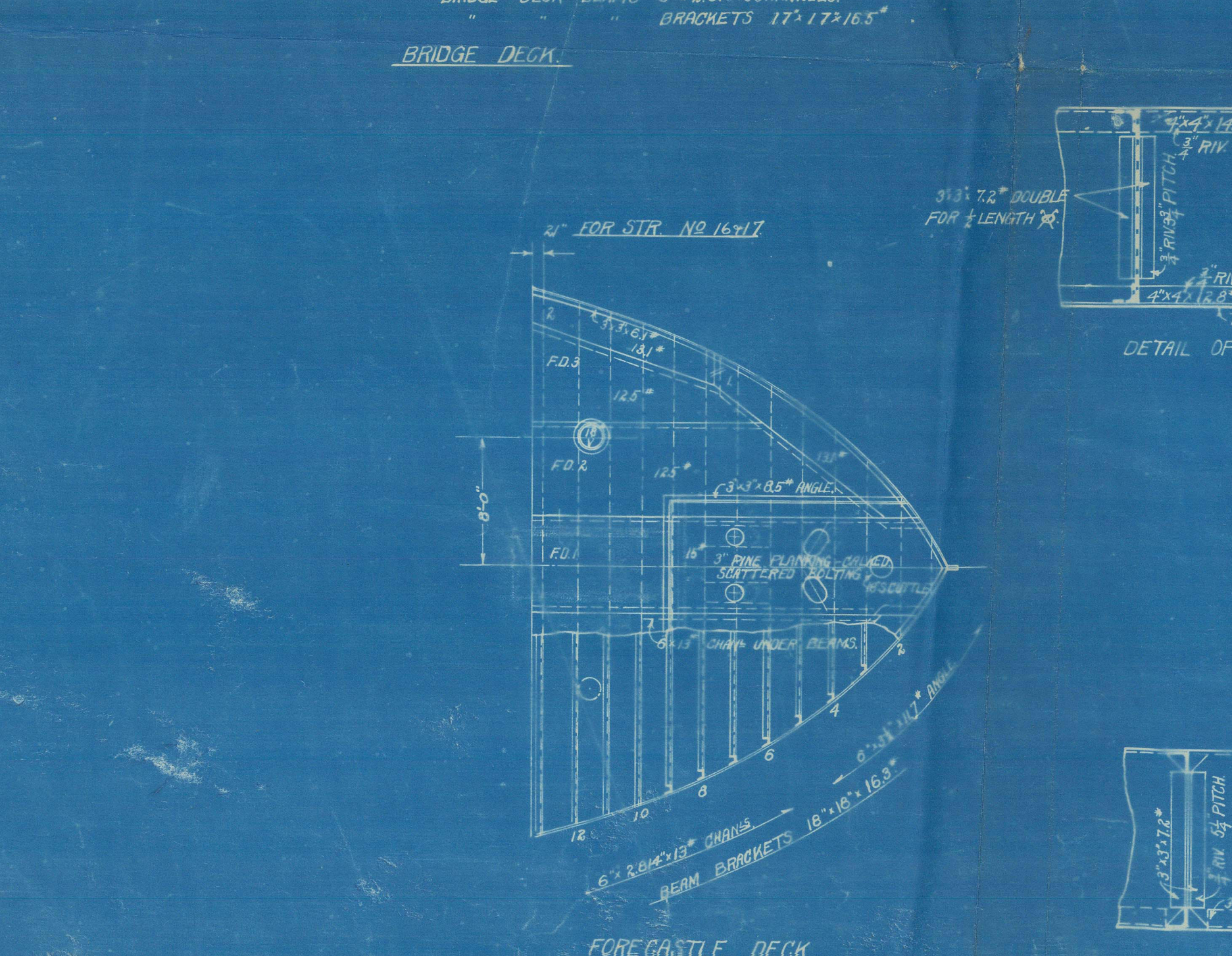
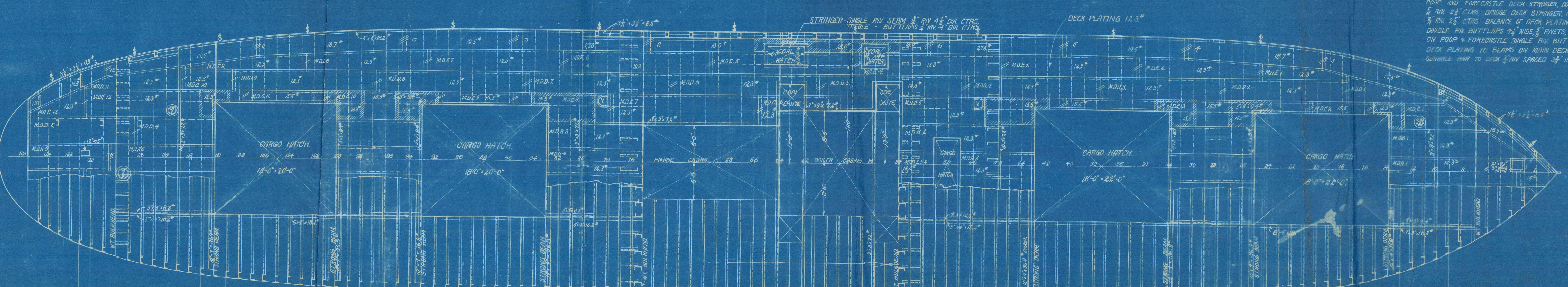
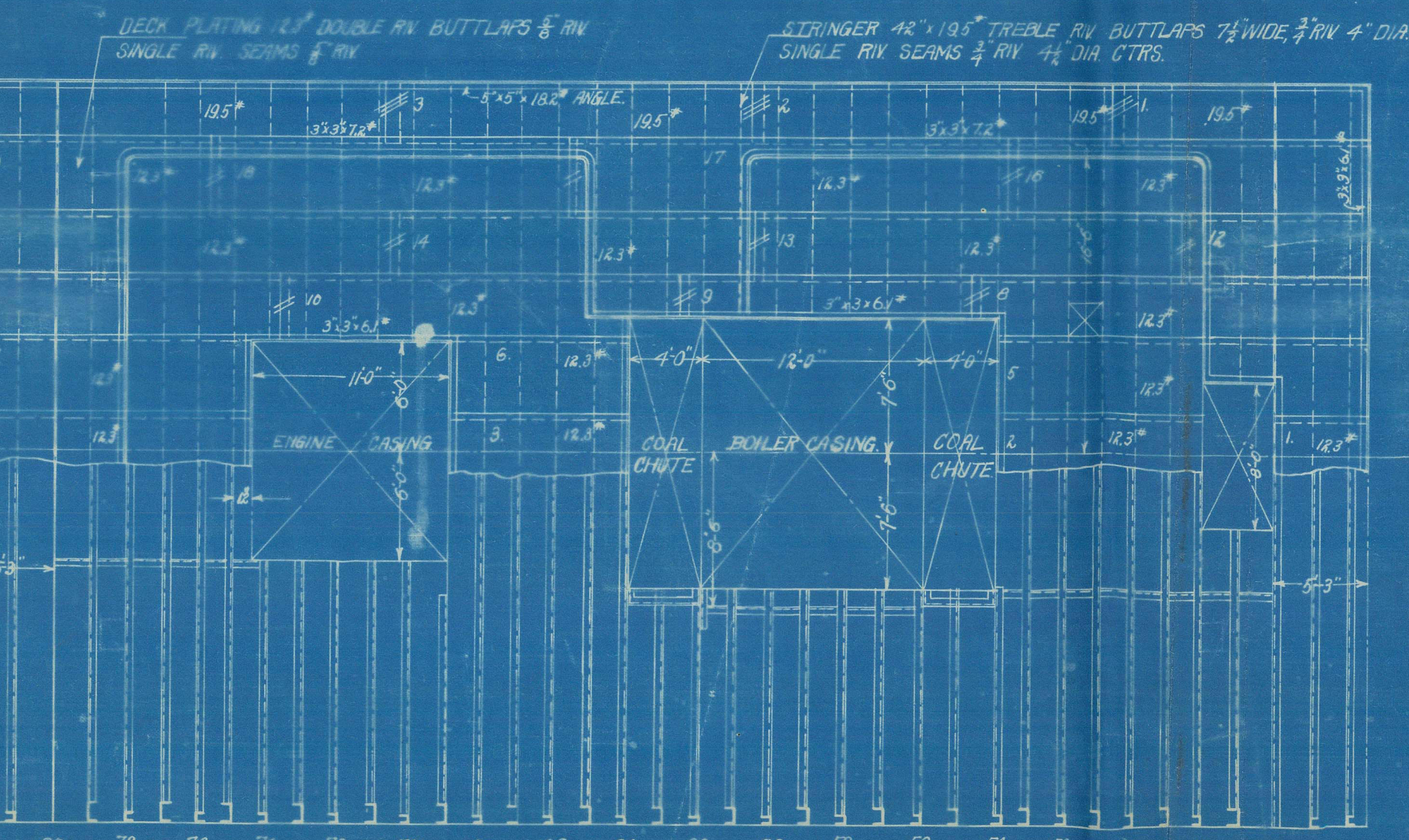
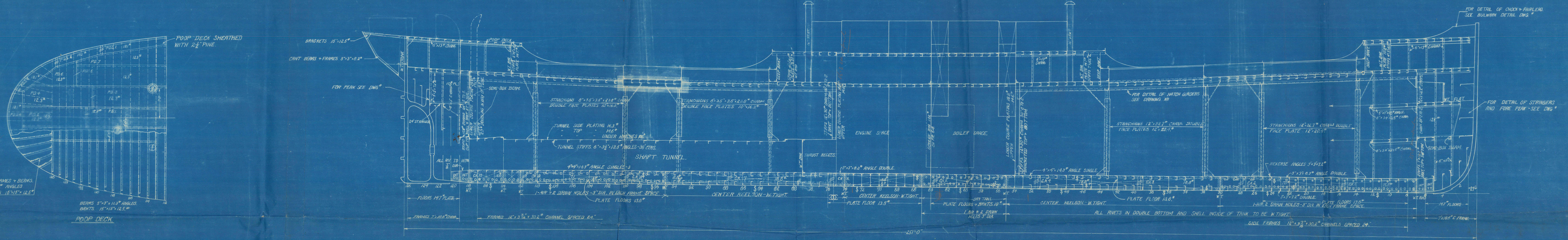
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NOTES:
 MAIN DECK STRINGER TRIPLE RIV BUTTLAPS 7 1/2\"/>

NOTE:
 NO BOSSOM PIECES ON DECK STRINGERS
 BARS IN BRIDGE IN POOP & FORECASTLE
 HOLD STRIPS IN PERNS

NOTES:
 RIVETING OF INNER BOTTOM
 RIDGE PLATE, SEAM & BUTTLAP 5\"/>

COPIED
 APPROVED
 MAY 15 1917

ORDER NO. CONTRACT NO. 18-19	ALTERATIONS	INBOARD PROFILE	
	HATCHES, S PORT SIDE APP. 75%	DECKS AND TANK TOP	
	COAL HATCHES TEXT. 100%	PORT ARTHUR SHIPBUILDING CO.	
		PORT ARTHURONT.	
		SCALE 3/4" = 1' FT. MAY 14, 1917	
		DRAWN BY AMF	CUT 12
		TRACED BY. AMF	
		CHECKED BY. REY	
ISSUED TO		DATE ISSUED	SEP 12 1917

J. Parawala

WLS

W1415-0049

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Post Office S. R. Co.

Extracts Nos. 18, 19, 20, 21

u War Dance

PT ARTHUR 23.

ho Reg.

29-1-89

Roller

RETAIN

W1415-0050



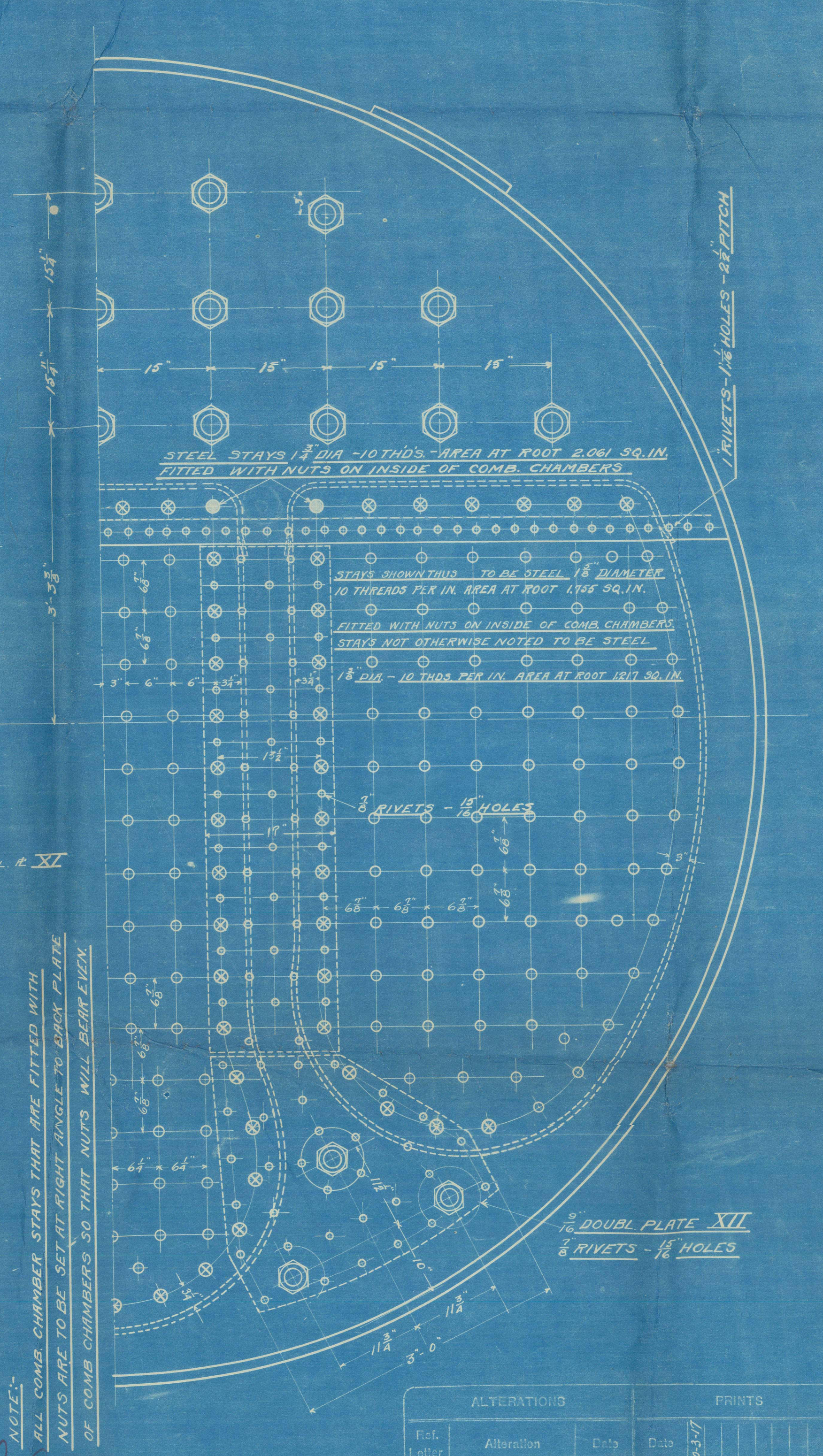
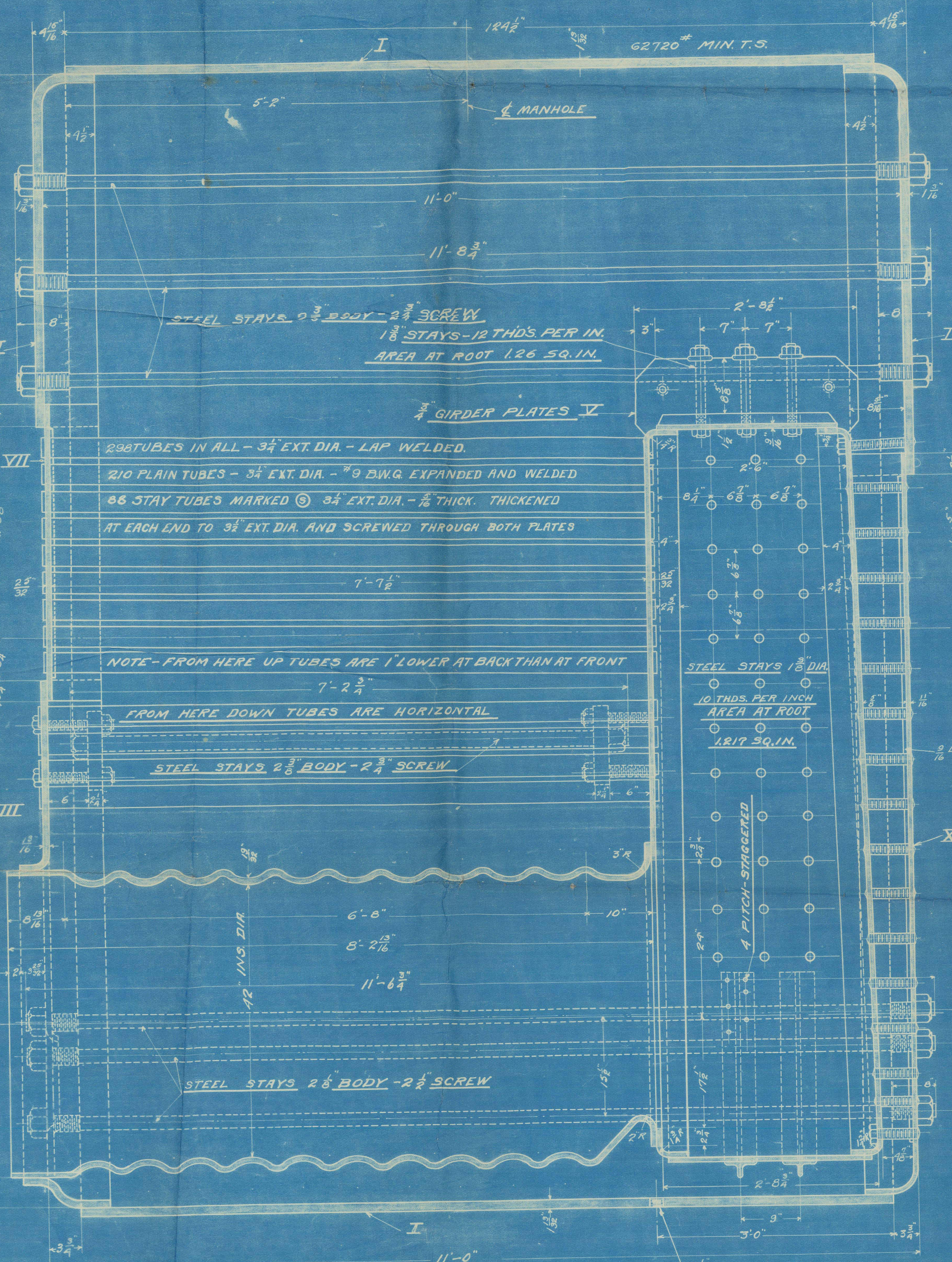
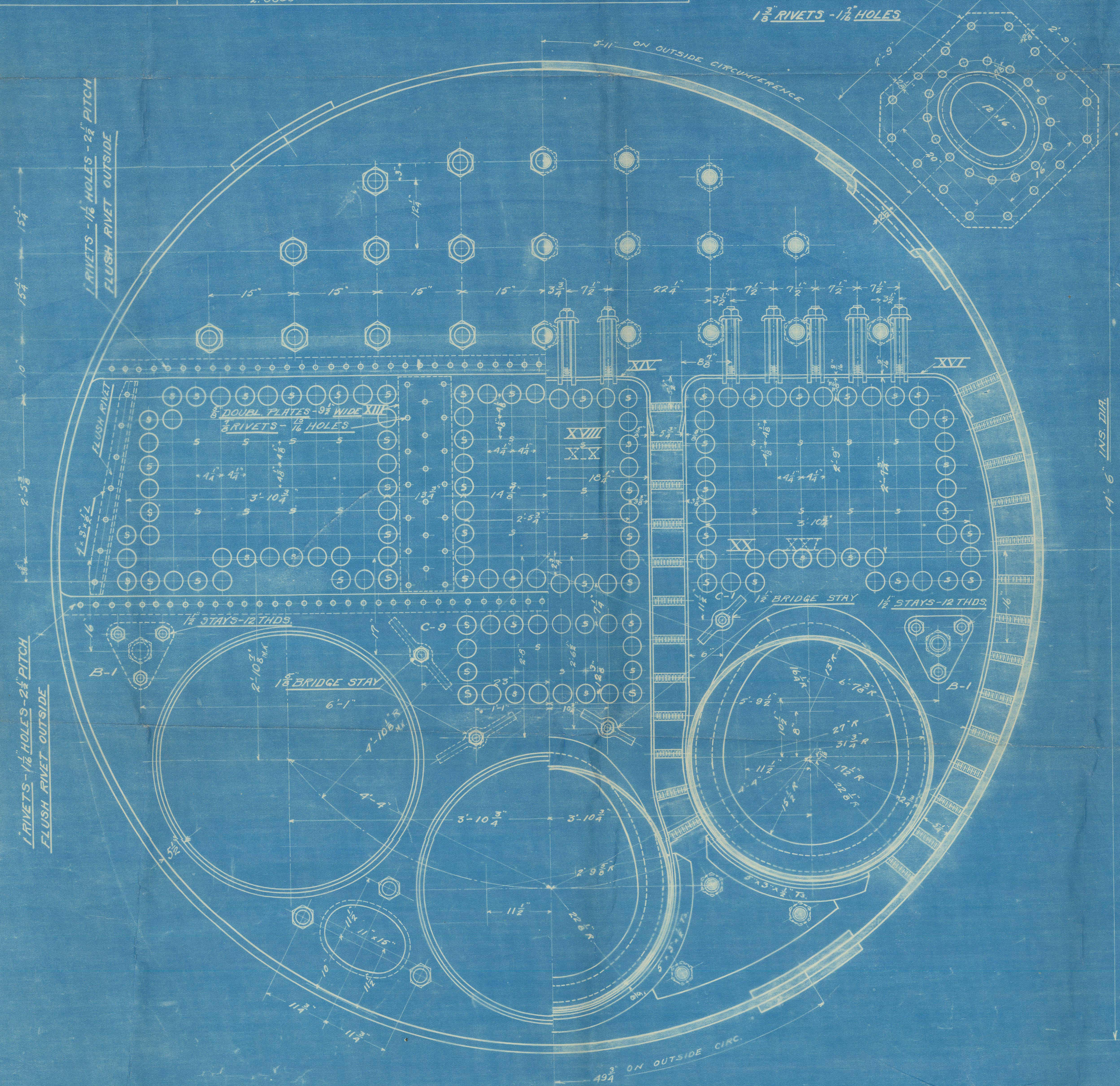
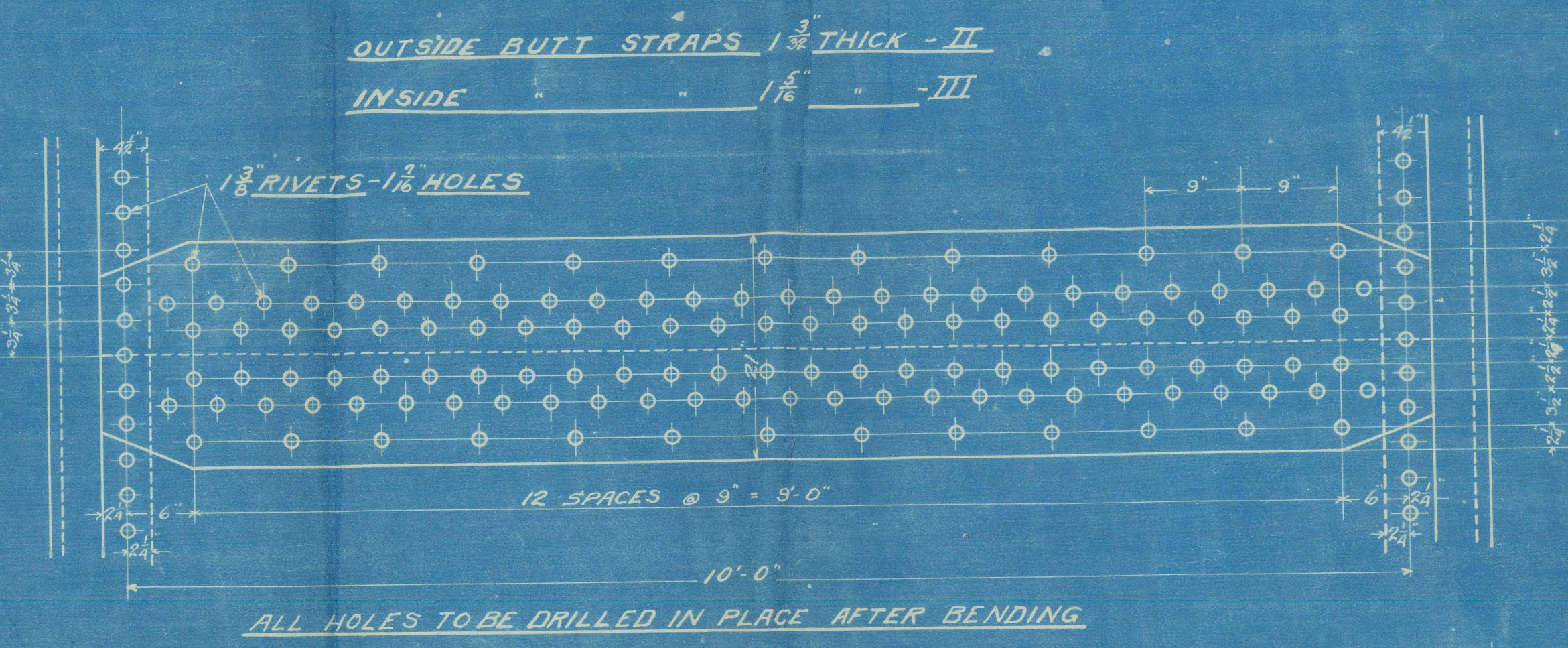
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FORMULA FOR STRENGTHS AT 190 ^{LB} WORKING PRESSURE			
	LLOYDS REGISTER	CANADIAN GOVT	
SHELL PLATE	$\frac{P \times D \times L}{10000} = 218 \frac{1}{2}$	$\frac{P \times D \times L}{10000} = 218 \frac{1}{2}$	
HEADS IN STEAM SPACE	$\frac{P \times D^2 \times L}{10000} = 218 \frac{1}{2}$	$\frac{P \times D^2 \times L}{10000} = 218 \frac{1}{2}$	
GIRDERS	$\frac{P \times D \times L}{10000} = 220$	$\frac{P \times D \times L}{10000} = 220$	
TUBE PLATE (COMPRESSION)	$\frac{P \times D \times L}{10000} = 222$	$\frac{P \times D \times L}{10000} = 222$	
(BENDING)	$\frac{P \times D \times L}{10000} = 198 \frac{1}{2}$	$\frac{P \times D \times L}{10000} = 198 \frac{1}{2}$	
FRONT HEAD IN WATER WAY	$\frac{P \times D \times L}{10000} = 194 \frac{1}{2}$	$\frac{P \times D \times L}{10000} = 194 \frac{1}{2}$	
NEAR HEAD BETW COMB CHRS	$\frac{P \times D \times L}{10000} = 209$	$\frac{P \times D \times L}{10000} = 209$	
TOP OF COMB CHRS	$\frac{P \times D \times L}{10000} = 208$	$\frac{P \times D \times L}{10000} = 208$	
SIDES & BACK OF COMB CHRS	$\frac{P \times D \times L}{10000} = 211$	$\frac{P \times D \times L}{10000} = 211$	
FURNACES	$\frac{P \times D \times L}{10000} = 205$	$\frac{P \times D \times L}{10000} = 205$	
MAIN STAYS	$\frac{P \times D \times L}{10000} = 197$	$\frac{P \times D \times L}{10000} = 197$	
1/8" THICK SCREW STAYS IN SIDES & BACK OF COMB CHRS	$\frac{P \times D \times L}{10000} = 206$	$\frac{P \times D \times L}{10000} = 206$	
1/8" THICK STAYS IN TOP OF COMB CHRS	$\frac{P \times D \times L}{10000} = 192$	$\frac{P \times D \times L}{10000} = 192$	
1/8" THICK SCREW STAYS AT VERT EDGE OF COMB CHRS	$\frac{P \times D \times L}{10000} = 200$	$\frac{P \times D \times L}{10000} = 200$	
1/8" THICK SCREW STAYS AT HORIZ EDGE OF COMB CHRS	$\frac{P \times D \times L}{10000} = 233$	$\frac{P \times D \times L}{10000} = 233$	
1/8" THICK SCREW STAYS IN CORNERS OF COMB CHRS	$\frac{P \times D \times L}{10000} = 208$	$\frac{P \times D \times L}{10000} = 208$	
THICKNESS OF BUTT STRAPS	$\frac{P \times D \times L}{10000} = 1082$	$\frac{P \times D \times L}{10000} = 1082$	
STRESS IN STAY TUBES	$\frac{P \times D \times L}{10000} = 3651$	$\frac{P \times D \times L}{10000} = 3651$	

DATA FOR ONE BOILER		1933 SQ. FT.
HEATING SURFACE OF TUBES		245
COMB CHAMBERS		135
FURNACES		2513
TOTAL		2893
GRATE SURFACE - 6' 0" GRATE BARS		63
RATIO HEATING SURFACE GRATE SURFACE		36.7%
STEAM SPACE WATER & ABOVE COMB CHAMBERS		
ESTIMATED WEIGHT OF BOILER		
WATER		
AREA OF SAFETY VALVES REQD. (NATURAL DRAFT)		182 X 63 = 11466 SQ. IN.
TWO 5" SAFETY VALVES REQD. AREA = 14.14 SQ. IN.		

EFFICIENCY OF LONGITUDINAL JOINT			
	LLOYDS REGISTER	CANADIAN GOVT	
PLATE	$\frac{9-14375}{100} = 84\%$	$\frac{9-14375}{100} = 84\%$	
RIVETS	$\frac{5 \times 175 \times 1623 \times 85}{9 \times 140625} = 95.4\%$	$\frac{23 \times 5 \times 175 \times 1623 \times 445 \times 100}{20 \times 9 \times 140625 \times 425} = 96.8\%$	
PLATE & RIVETS COMBINED	$\frac{9-2 \times 14375}{100} = 95.4\%$	$\frac{9-2 \times 14375}{100} = 96.8\%$	



NOTE: ALL STAYS AND RIVETS TO BE STEEL TESTED TO COMPLY WITH REQUIREMENTS OF LLOYDS REGISTER AND CANADIAN GOVT. ALL RIVET HOLES TO BE DRILLED.

TO PASS INSPECTION OF LLOYDS REGISTER AND CANADIAN GOVT. PART 1 FOR A WORKING PRESSURE OF 190 LBS. PER SQ. INCH.

TWO BOILERS REQD. ONE AS SHOWN ONE TO OP. HAND

NOTE: ALL COMB CHAMBER STAYS THAT ARE FITTED WITH NUTS ARE TO BE SET AT RIGHT ANGLE TO WORK PLATE OF COMB CHAMBERS SO THAT NUTS WILL BEAR EVEN.

APPROVED

ALTERATIONS

PRINTS

Boiler

14' 6" DIA. x 11' 0" HEADS - 190"

PORT ARTHUR SHIPBUILDING CO.

PORT ARTHUR, ONT.

SCALE: 1/4" = 1'-0"

DATE: MAR. 11, 1916

DRAWN BY: H. J. B.

TRACED BY: H. J. B.

CHECKED BY: H. J. B.

DATE ISSUED:

